

REMARKS

Claim Rejections

Claims 1-82 are canceled and new claims 83-113 are added to further clarify the invention. As a result, Claims 83-113 remain pending in the application.

Rejection of Claim 75 under 35 U.S.C. §112

Subject matter from cancelled Claim 75 is included in new Claim 102. For instance, Claim 102 specifies “each of the electrodes is constructed of the same material.” Cancelled Claim 75 was rejected for failing to meet the written description requirement because “the specification recites that each type of electrode is construct with different materials.” However, paragraph 76 provides that “(p)referably the material used for all the electrochemical electrodes is gold.” See also paragraph 77. As a result, the specification teaches sensors where each of the electrodes are constructed of the same material as is claimed.

Rejection of Claim 77 under 35 U.S.C. §112

Subject matter from cancelled Claim 77 is included in new Claim 103. For instance, Claim 103 specifies “each of the electrodes has a different shape.” Cancelled Claim 77 was rejected for failing to meet the written description requirement. Figure 3, Figure 4 and Figure 5 each illustrate sensors where each of the electrodes has a different shape. Observation of these Figures allows one to conclude that Applicant possessed a sensor where the electrodes have a different shape.

Rejection of Claims 1-13, 15-18, 20, 51-52, 75-76 and 78-79 under 35 U.S.C. §102 U.S. Patent Number 5,567,302 (Song)

Subject matter from cancelled Independent Claim 1 is included in new Independent Claim 83. Independent Claim 1 was rejected as anticipated by U.S. Patent Number 5,567,302 (Song).

Independent Claim 83 is directed to a method of detecting the presence or measuring the quantity of a target analyte in a sample reagent. The method includes positioning the sample reagent on a biosensor that includes electrodes that each consist of a single layer of an

electrically conductive material. The method also includes measuring an electrical signal from the biosensor so as to determine the presence and/or quantity of the target analyte in the sample reagent.

“To anticipate a claim, the reference must teach every element of the claim.” See MPEP §2131. Independent Claim 83 specifies “controlling a potential difference between two of the electrodes” where the electrodes are “positioned on (a) substrate.” Accordingly, Song must teach controlling a potential difference between two electrodes positioned on a substrate.

Song teaches a coulometric feedback system, capable of quantitation at 8 sites. The system includes an array of feedback electrodes. “The feedback electrode array chip ... has 8 electrode sites.” The “feedback electrode array ... is used to inject the charge required to stabilize the redox potential at each of the 8 sites.” See column 6, line 5 and column 5, lines 5-55. Because Song teaches employing the electrodes to stabilize the redox potential at each of the electrode sites, Song does not teach controlling a potential difference between two electrodes positioned on a substrate. As a result, Song does not anticipate new Independent Claim 83 because Song does not teach each element of the amended Claims.

Rejection of Claims 1-9, 11-13, 15-18, 20, 51-52, 75-76 and 78-82 under 35 U.S.C. §102 in view of U.S. Patent Number 5,632,957 (Heller).

Subject matter from cancelled Independent Claim 1 is included in new Independent Claim 83. Independent Claim 1 was rejected as anticipated by U.S. Patent Number 5,632,957 (Heller).

“To anticipate a claim, the reference must teach every element of the claim.” See MPEP §2131. Independent Claim 83 specifies “measuring an electrical signal from the biosensor so as to determine the presence and/or quantity of the target analyte in the sample reagent.” Accordingly, Heller must teach measuring an electrical signal from the biosensor so as to determine the presence and/or quantity of the target analyte in the sample reagent.”

Heller teaches an APEX device having an array of microlocations where each microlocation includes an electrode. Heller teaches a “detector (is) ... optically coupled to the APEX device.” Accordingly, Heller teaches use of an optical signal to detect the presence of an analyte. However, Heller does not teach measuring an electrical signal from the microlocations so as to determine the presence or quantity of the target analyte in the sample reagent. As a

result, Heller does not anticipate new Independent Claim 83 because Heller does not teach each element of the amended Claims.

Rejection of Claims 1-8, 11-13, 15-17, 20, 51-52 and 75-82 under 35 U.S.C. §102 in view of U.S. Patent Number 6,238,624 (Heller).

Subject matter from cancelled Independent Claim 1 is included in new Independent Claim 83. Independent Claim 1 was rejected as anticipated by U.S. Patent Number 6,238,624 (Heller).

“To anticipate a claim, the reference must teach every element of the claim.” See MPEP §2131. Independent Claim 83 specifies “measuring an electrical signal from the biosensor so as to determine the presence and/or quantity of the target analyte in the sample reagent.”

Accordingly, Heller must teach measuring an electrical signal from the biosensor so as to determine the presence or quantity of the target analyte in the sample reagent.”

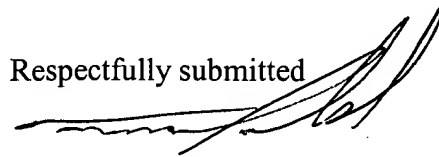
Heller teaches an APEX device having an array of microlocations where each microlocation includes an electrode. The Examiner directs the Applicants attention to Column 6, lines 36-42 for the measuring and determining steps. Column 6, line 37-38 teach that “detection of hybridized complexes at each micro-location by using an associated optical ... imaging detector system.” Accordingly, Heller teaches the use of an optical signal from complexes at the microlocations for detection. The use of an optical signal does not teach employing an electrical signal from a biosensor to determine the presence and/or quantity of the target analyte as is claimed.

Column 6, line 39-42 teach that “electronic sensing components which directly detect DNA can also be incorporated within the device itself.” Accordingly, Heller teaches incorporating a sensor into the APEX device for the purposes of detection. Heller does not teach that the incorporated sensor has “electrically conductive electrodes positioned on a substrate” where “each of the electrodes consist(s) of a single layer of an electrically conductive material” as is specified in Independent Claim 83. As a result, the cited portion of the Heller does not teach each element of new Independent Claim 83.

CONCLUSION

In light of the Amendments and arguments set forth above, Applicants believe they are entitled to a letters patent. The Examiner is encouraged to telephone the undersigned with any questions.

Respectfully submitted



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